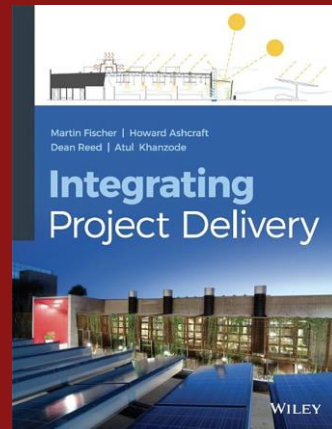


# VDC (Virtual Design and Construction): How to leave today's future of managing construction projects behind

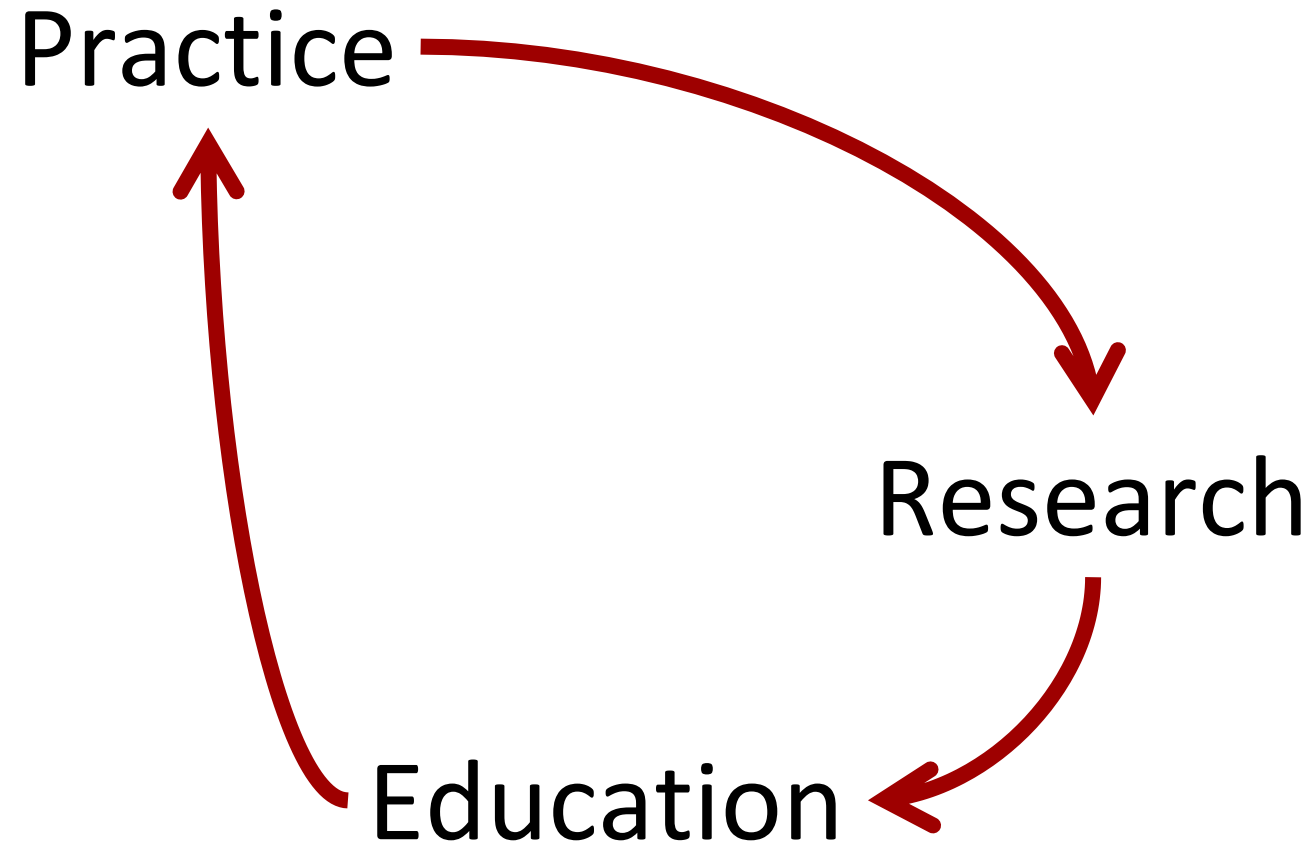


**Stanford**  
Center for Professional Development

Martin Fischer, Stanford University  
Kumagai Professor of Engineering  
Professor, Civil & Environmental Engineering  
fischer@Stanford.edu



The CIFE community accelerates the cycle of innovation from practice to research to education to practice, and so on

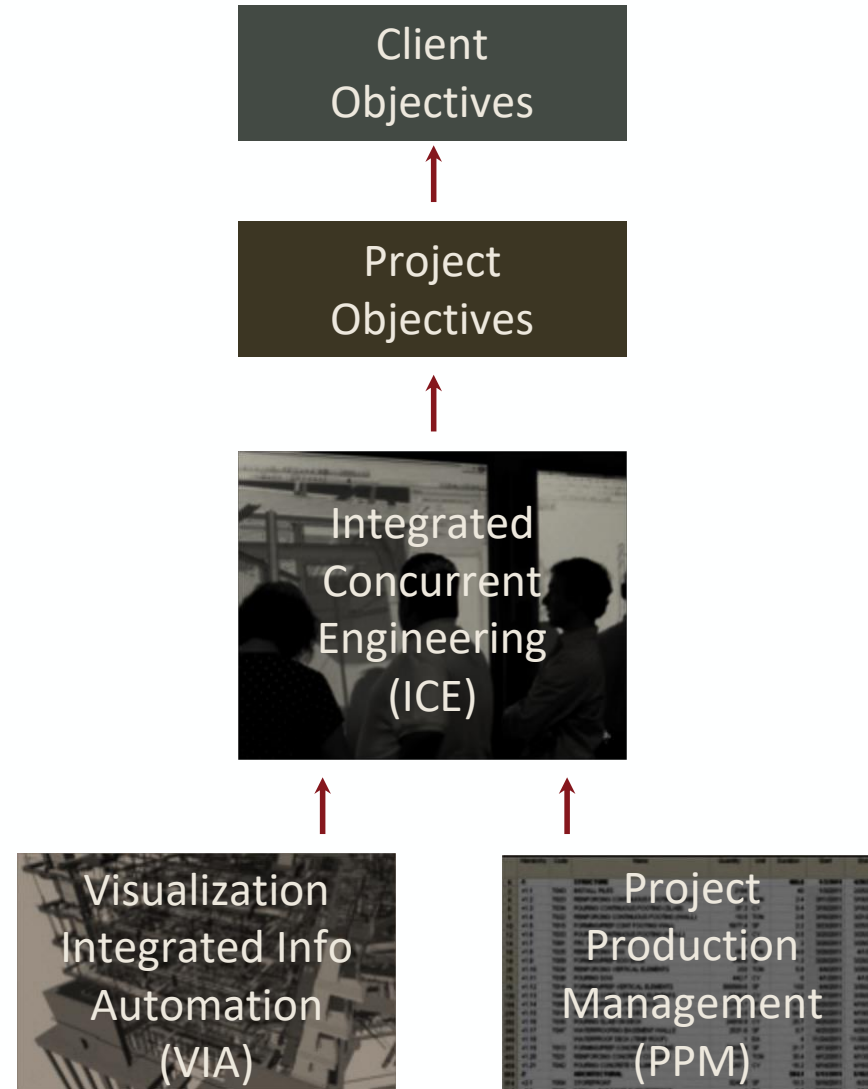


The **combination of emerging digital technologies** creates **unprecedented opportunities** for **supporting project teams** in creating high-performing buildings

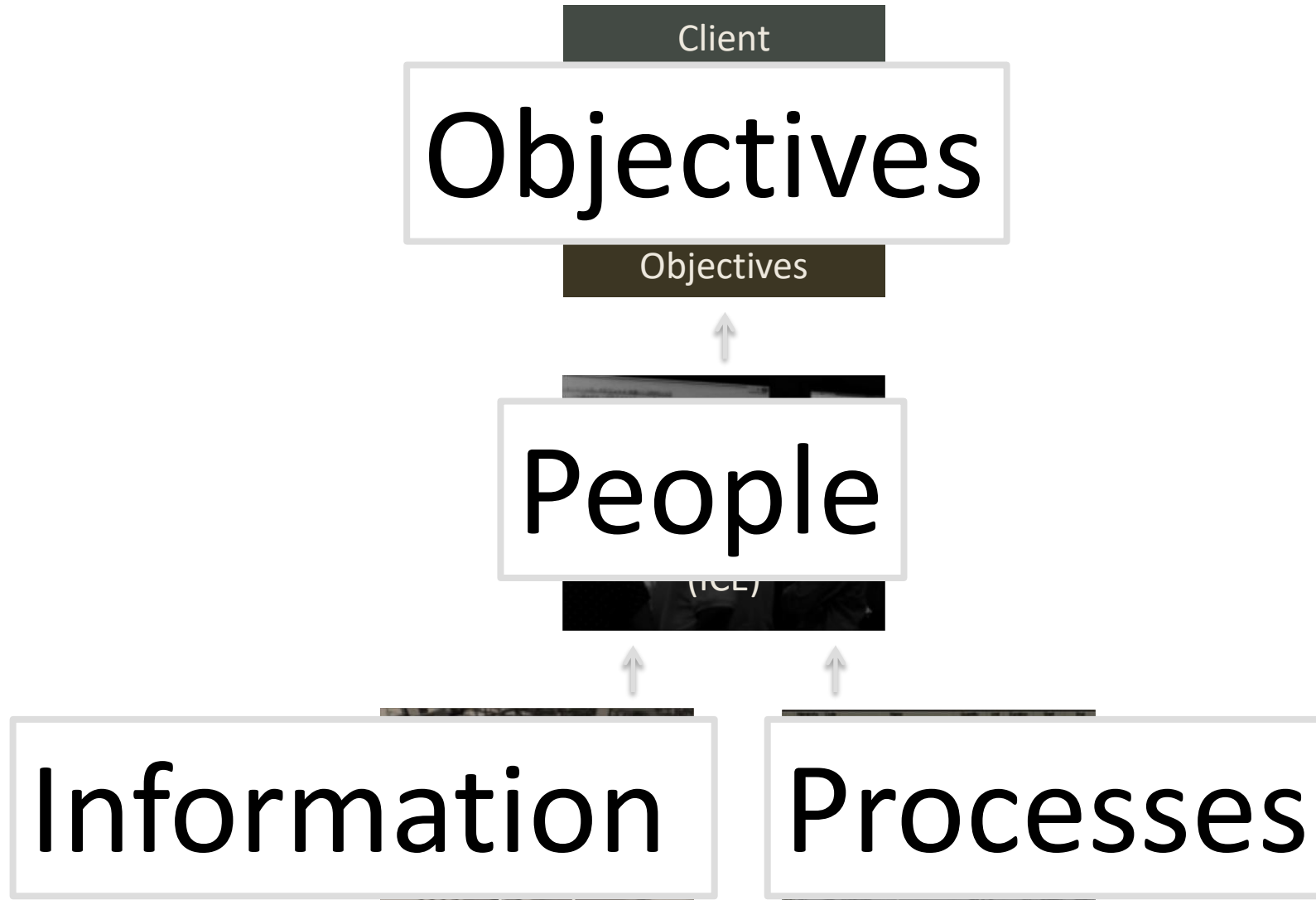
- *Mobile*
- *Cloud / Parallelization*
- *Location / Dimensional Control*
- *Machine Learning / Artificial Intelligence*
- *Robotics / Additive Manufacturing*
- *Internet of Things (IoT)*
- *Virtual Reality / Augmented Reality*
- *Etc.*

# VDC (Virtual Design and Construction) Program

- KPIs
- Collaboration
- BIM
- Lean



# VDC Framework



# Professional VDC Certificate Program

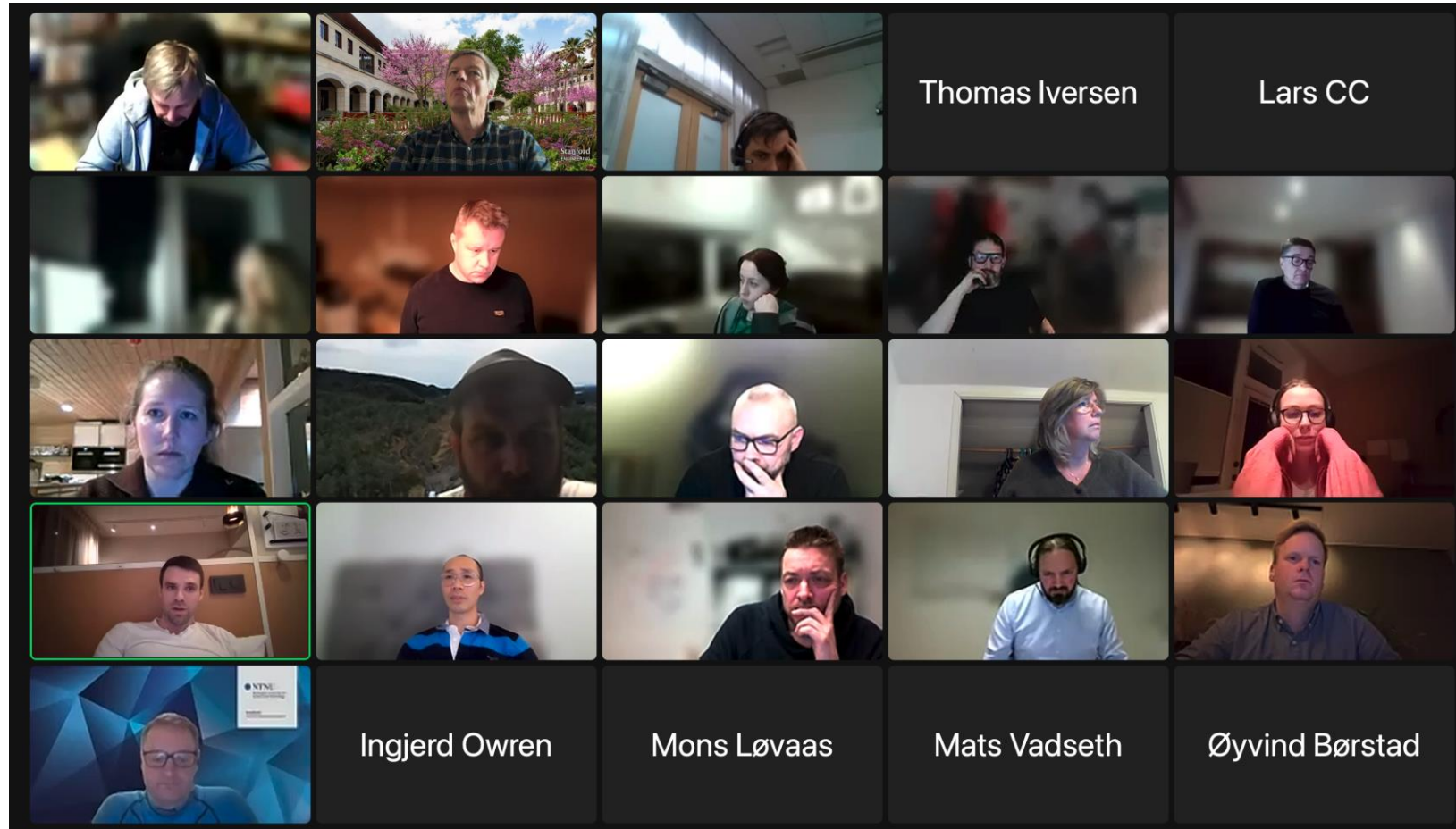
- For program and project managers and project engineers
- VDC becomes the operating system for projects
- Learning by doing → obtaining value quickly
- Supported by VDC-certified professionals

# Professional VDC Certificate Program

- Strong concepts
- Common vocabulary
- Learn by doing
- Diverse
  - All roles
  - All functions
- Large scale

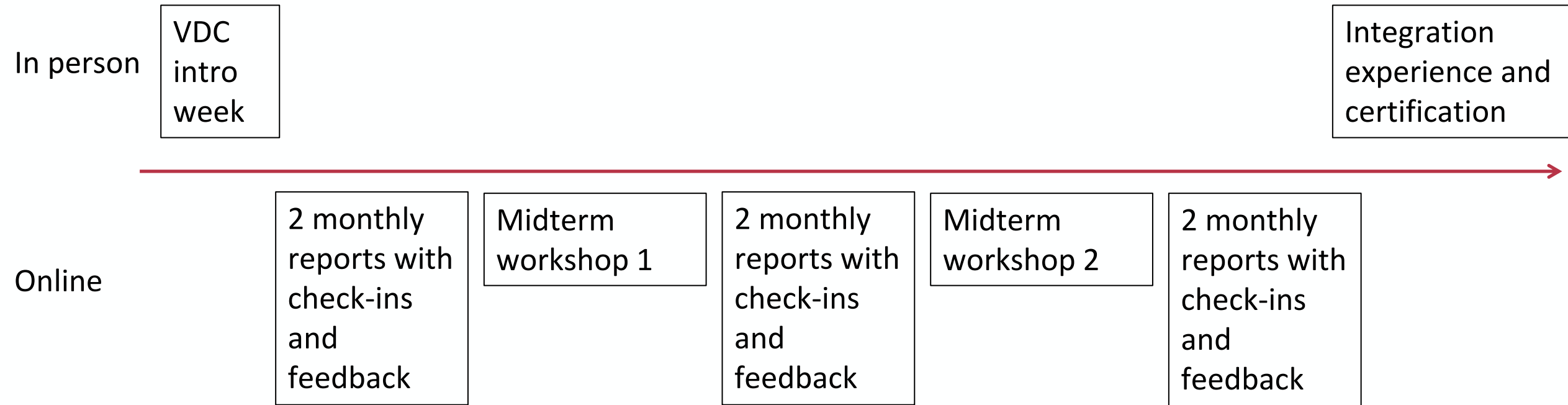
# VDC-certified Professionals as VDC Mentors

Aug 2024 – May 2025





# VDC “learning by doing” timeline over about 9 months

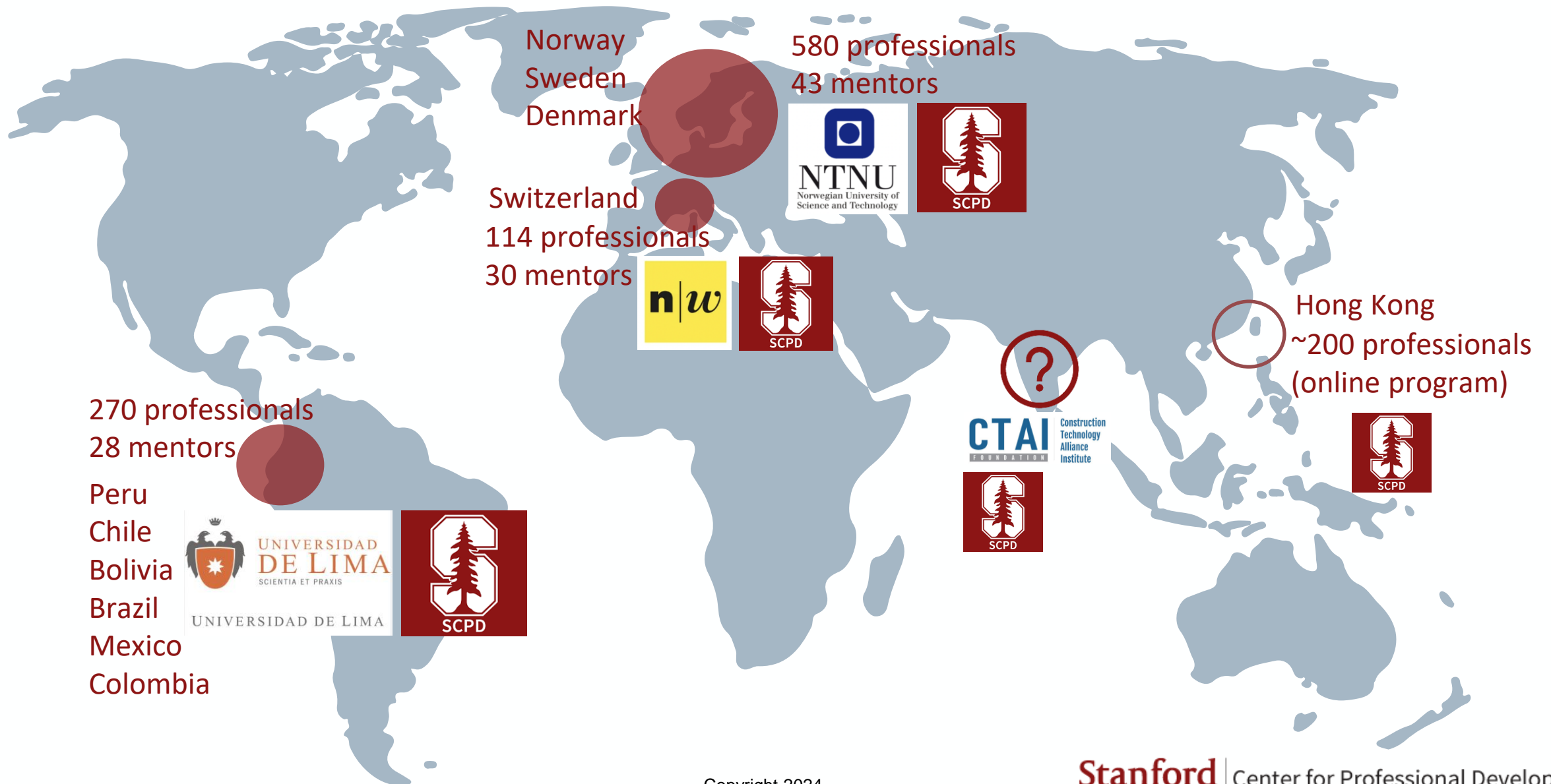


# VDC Intro Week: Learning to speak and apply VDC

VDC Intro	Integrated Concurrent Engineering (ICE)	ICE and VIA	PPM - variability	VDC implementation planning
Metrics Framework	Visualization, Integrated Information, Automation (VIA)	Project Production Management (PPM) – Process mapping	VDC as a whole	VDC implementation planning

Each half day consists of a lecture by Martin Fischer to introduce the concepts and terminology, including examples, a presentation by a VDC practitioner, a workshop, and feedback.

# ~2,000 VDC certified professionals around the world



# Professional VDC education with SCPD

Start	End	Host	Main countries	# of prof	# of prof mentors
8/19/19	5/15/20	NTNU	Norway, Denmark, Sweden	180	11
3/9/20	12/15/20	Univ. of Lima	Peru, Bolivia, Chile, Brazil, Colombia, Mexico	120	12
9/24/20	8/14/21	FHNW	Switzerland	55	16
1/11/21	10/26/21	NTNU	Norway, Sweden	200	13
8/2/21	3/18/22	Univ. of Lima	Latin America	107	10
3/8/22	1/28/23	FHNW	Switzerland	50	13
8/22/22	3/10/23	Univ. of Lima	Peru	70	8
8/29/22	5/25/23	NTNU	Norway	180	20
4/15/24	12/13/24	<i>Univ. of Lima</i>	<i>Peru</i>	<i>100</i>	<i>10</i>
8/19/24	5/27/25	<i>FHNW</i>	<i>Switzerland</i>	<i>100</i>	<i>10</i>
8/26/24	5/21/25	<i>NTNU</i>	<i>Norway</i>	<i>250</i>	<i>30</i>

Exploring VDC programs in India (IIT Madras), Sweden (KTH), Finland (Aalto U.), Mexico (LCI Mexico), and Chile (U Catolica).

# VDC program cohorts

NTNU in Norway



FHNW in CH



ULima in Peru

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